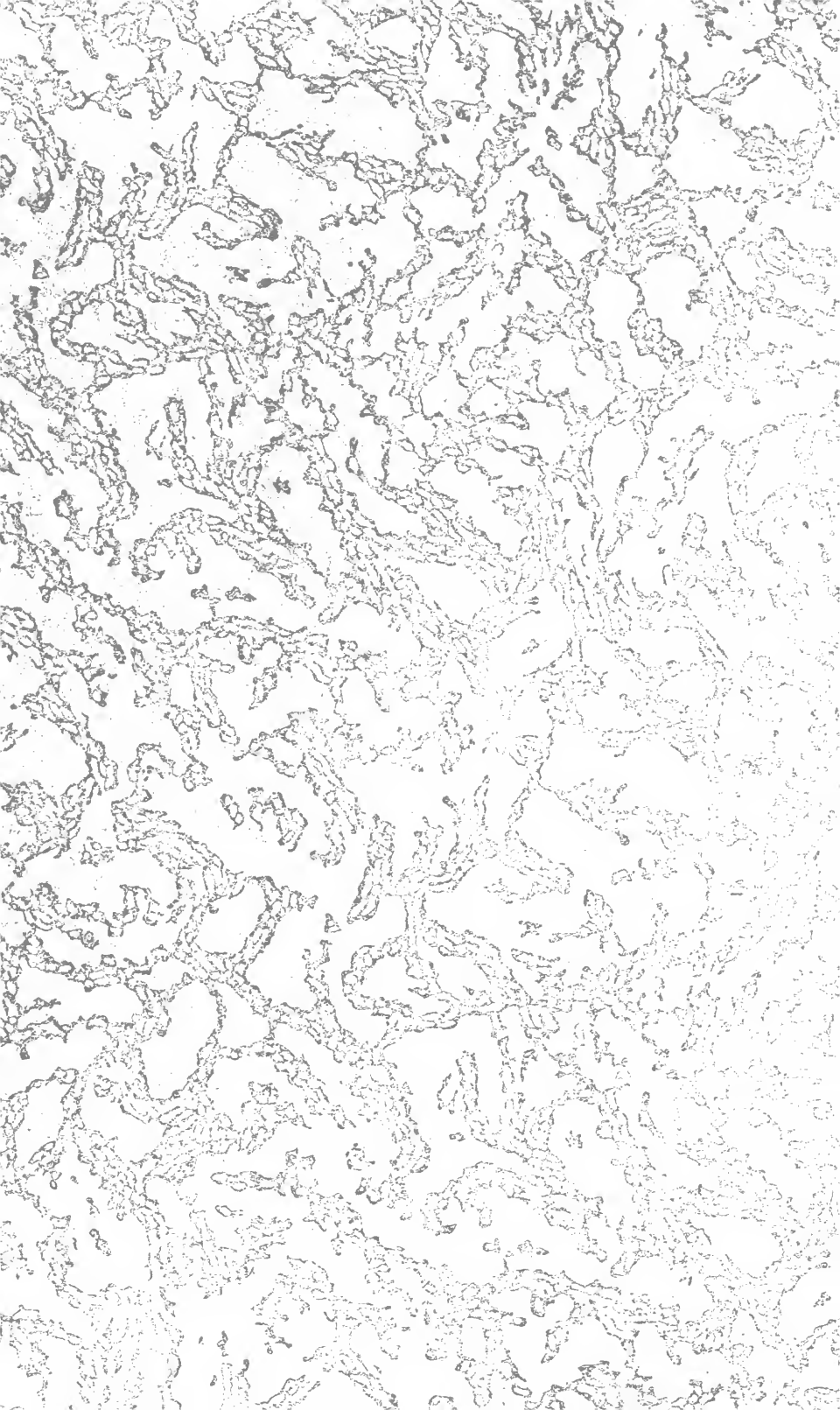
F
786
H5

AA 000 886 306 0
UC SOUTHERN REGIONAL LIBRARY FACILITY



THE UNIVERSITY OF CALIFORNIA, SAN DIEGO
LA JOLLA, CALIFORNIA 92038

ARCHAEOLOGICAL INSTITUTE OF AMERICA

PAPERS

OF THE

SCHOOL OF AMERICAN RESEARCH

New Series--Number Two

THE SOUTHWEST: YESTERDAY AND TOMORROW

BY EDGAR L. HEWETT

PRESIDENTIAL ADDRESS

American Association for the Advancement of Science, Southwestern Division
First Annual Meeting, El Paso, December 2, 1920

NEW SERIES PAPER NO. 2
1921

LIBRARY
UNIVERSITY OF
CALIFORNIA
SAN DIEGO

F
786
H5

The Southwest: Yesterday and To-morrow

By Edgar L. Hewett

Presidential Address

American Association for the Advancement of Science

Southwestern Division

First Annual Meeting, El Paso, December 2, 1920

At this, the initial session of the Southwestern Division of the American Association for the Advancement of Science, it seems fitting that we should take a broad survey of the Southwest as it has come to us from the ages and as it expands to the future, inviting the efforts of science, commerce, industry and art.

The natural character of the Southwest sets it apart as a definite unit in our land; co-ordinate with the Mississippi Valley, the Great Plains, the Rocky Mountains, the Pacific Coast, the Gulf States, the Atlantic Seaboard. To understand the natural history of this vast heritage is the first step for those who seek life, fortune and happiness within its borders. It is the foundation upon which all material development must rest.

The human history of the Southwest stretches back over milleniums. In its first phase, that preceding the conquest by Europeans, it affords an almost unbroken record of the evolution of the human mind under certain definite conditions. It is the life history of a race that sought adjustment to a not very hospitable environment, by adaptation to it rather than by conflict with it. In the second phase, that from the conquest to our time, we have the record of the efforts of a race that seeks not so much to adapt itself to existing conditions, as to change the conditions, even to the extent of transforming a region from a naturally adverse character to something agreeable.

This is a heroic process; therefore the history of our race is the prolific source of spiritual ideals. From history come the inspiring stories of achievement, the models of personal character. The results of the long experiments, trial, errors, successes, failures, in human society and government point out the way of assured progress. A forwardlooking people can know the forward way only by being intelligently backwardlooking. There is no othe light upon the future, save that of history, and the future can only reap from what was planted in the past. The Spaniards have a proverb, true as it is beautiful, "Manana flor de sus ayeres." In plain truth, tomorrow is the flower of all the yesterdays. In veneration of the traditions of the past, a community lays the foundation of its home life; a nation rests secure in the patriotic devotion of its people. Whatever may come to the Southwest, its wealth in history is assured.

But the subject of material resources will engage the efforts of more investigators than all the other fields put together. What mountains can be pierced with mine shafts and tunnels? where are the oil sands to be tapped? what areas can be brought under irrigation? what of the timber? what of the ranges? It is the extension of the most primitive activity of

man—the food quest. Perhaps with the American people it has gone beyond the supplying of actual needs, even beyond wise provision for wellbeing and that the pyramids of wealth that are being raised in our time, will in the future seem as useless as, and far less enduring than the gigantic works of ancient Egyptian kings. Let us hope not, but that on the contrary this unparalleled accumulation of wealth is destined to be the foundation of a civilization, in which commerce and culture and industry may flourish equally. However that may turn out, our age and our people look upon development of resources as the corner stone of their welfare.

Most imperative of all are the human relations that demand consideration. If the people of the Southwest are to be as successful intellectually and spiritually as they hope to become commercially, then education, scientific research, social and moral conditions, must be considered in a spirit of community of interest throughout the Southwest. When it comes to to the education of our children, the health and happiness of our families, social morality, the pursuit of science, the people of Texas, Chihuahua, New Mexico, Sonora and Arizona may and should strike hands in firm accord.

From the viewpoint of time, researchers are in two camps. Yesterday is to the historian, the archaeologist, the palaeontologist, to the student of beginnings and of the slow evolutionary processes; the shaping of the earth and the development of life; the building of man in body, culture and spirit; the making of races, tribes, communities and nations; the story of the extension of man's supremacy over land, sea, air, and the forces of nature. Tomorrow is to the electrician, the chemist, the engineer, the economist, --to those who see in material progress the duty and destiny of man. Those of the former group calculate in milleniums. They contemplate the long leisure of the centuries. Their thoughts move in vast orbits. With them "a thousand years are but as yesterday." Those of the latter group split seconds. They do not care to await the slow procession of nature. They know no orbits. They plow deep channels straight ahead.

I have spoken of the Southwest as a physiographic unit, co-ordinate with mountain, plain, valley, and seacoast areas. Among these indefinitely bounded regions, it is not the least in extent, though it is the least known. Roughly, it extends a thousand miles north and south and eight hundred east and west. It embraces in its physiography, features of all the other named areas. No other is so varied in natural conditionls and resources. At the same time none is more definitely characterized. It lies mainly in high altitudes and for the most part, is not abundantly supplied with water. Because of the scarcity and uneven distribution of moisture over the seasons, vast areas have remained arid. This is the dominating factor in the Southwest; in its history and in its future.

A great part of the human energy that has been spent in the Southwest in the past has been in struggle with desert conditions and so it will be in the future. Aridity then is a sort of key word in scientific research, as well as in industry in the Southwest. It determined the entire life history of the first race that settled here and it is engaging a large part of the mental and physical energies of the people today. Of all the land areas the desert has been the most refractory to man's efforts. The European has been accustomed to working quick and radical transformations. Plains and forests have yielded to agriculture. Cities have sprung up from primeval swamps. The mountains are honeycombed with mines. The sea has been brought into the service of commerce. But the desert remains unmastered. Here for a millenium man wrought and made no visible change. It was for him to take it as he found it, leave it, or die. The Indian made little effort to conquer it. He matched his wits against the scorching winds and smothering sand storms and wintry blasts for centuries. He

learned its ways and adapted himself to its conditions, as the desert plants did. He therefore survived and made it a hospitable home. To the white man it was uninviting, save to a few who fell under its spell and forgot discomforts in its indescribable charm. It is a privilege to be one of those who love the calm desert land. The majesty of silence and space that rests upon it, suggests the vastness in which Eternal Mind organizes the energies of the universe. The human spirit so immersed for generations must live in a state of freedom that is unknown in crowded centers of population. Humanity in this environment for ages would probably be content without rapid movement, instantaneous communication, the division of time into fractions of seconds, the incessant shock of machinery; political campaigns, class hatreds, industrial revolutions and world wars. Space is the first requisite of mental and spiritual tranquility. It is reflected in the imperturbable nature of the Indian race, whose psychology was established in the freedom of limitless plains and deserts, forests and mountains.

If you have known the hospitality of the ranches and haciendas from northern New Mexico to southern Chihuahua and from western Texas to southern California and Sonora, you know what those primeval conditions that I have described did to the spirit of man. The open-handed hospitality, the buoyant social life, the calm courage, the determined resourcefulness of those pioneers, Spanish and Anglo-Saxon, are reflections of that vast environment. These are not simply romantic memories of early days. They are charming realities that some of us have been privileged to know. The men who still live from that time, calm and silent and strong and gentle and generous, are the ones to whom we turn today with our difficulties and our visions, with certain assurance of wise and sympathetic counsel. One loves to dwell on those characters of the pioneer times of our Southwest. They are the greatest asset we have ever had or ever will have. Let us hope that their courageous spirit has been transmitted to us, for assuredly it is needed now as much as it ever was.

I would like in this rapid survey to give you a picture of the ancient Southwestern world, as this is something that may not be done in the section meetings. Will you for a moment obliterate in your minds, every vestige of our civilization? Consulting a map showing the distribution of sedentary population in the centuries antedating the coming of Europeans to America, it is seen that this extensive province was composed of five drainage basins namely, the Rio Grande on the east side of the Continental Divide, the San Juan, Little Colorado and Gila on the Western slope and the Inland Basin of Chihuahua. This was one physiographic unit. That it became in time a culture area that was coextensive, speaks distinctly of the coercive influence of environment upon human society.

The groups of population distributed over this region may be considered contemporaneous. This use of the term must not be taken to imply exactly synchronous periods, but construed in the newer historic sense in which evolution is the dominant factor in human history. A difference of a century or two in time does not disturb the contemporaneity of the people. Here is the picture I want you to see.

Looking across the desert from where we now stand to the north two hundred miles are the cliff dwellers of the plateau near Santa Fe, and still farther north the cliff dwellers of Mesa Verde, Colo.; to the northwest the forebears of the Seven Cities of Cibola, the ancient Zuni towns; north of them the settlements in Canon de Chelly; in the San Juan valley a numerous population of cliff and mesa dwellers, with isolated outposts of small population in every direction. There in western Arizona are the ancestors of the Hopi, and the Little Colorado valley is the seat of many towns. In the Rio Grande

drainage the communities are forming, which are to become the settlements of Jemez, Taos, Pecos and Gran Quivira. In Southern New Mexico are the people of the Mimbres and along the Gila almost from the headwaters in New Mexico to its mouth in Arizona are settlements of Cliff Dwellers where geographical conditions so direct and Mesa and Valley towns like Casa Grande in the level flood plain. To the south in Chihuahua are the populous districts of Casas Grandes, Cave Valley and the cliffs and canons of the headwaters of the Yaqui. may be considered contemporaries and cultural cognates. It may be reasonably supposed that far to the south on the Mexican Plateau, the pre-Aztecan towns are flourishing; that in Central America the earlier Maya communities of Yucatan and the temple cities of Guatemala and Honduras are in their prime and that in distant Peru, the Incas are running thetr course. I hope you can visualize this situation.

It was an epoch of building in America, from Colorado, Utah, Arizona and New Mexico to Peru, lasting several centuries and finished before the European invasion. It would seem that the period originated with the formation of the sedentary communities over this vast region, all of which invited this mode of life as the great plains with the countless buffalo herds, the temperate forests and mountain areas, with abundant game and fish; and coast regions with bountiful resources of sea food would not. Where subsistence was derived mainly from the soil and corn was the chief product, it was a matter of vital interest to the people to secure their land in permanence and insure its water supply and build permanent structures for residence, defense and religious practices.

There is a similarity of resources throughout this entire region. It occupies the Cordillera with its principal foci of population in high altitudes. From its northern to its southern extremities, corn was the common factor of cultural evolution, as metal was in Europe. It was necessary to farm by irrigation, rainfall being too unevenly distributed over the seasons to insure germination, growth, fertilization and maturity of corn and other food crops. The conditions of climate and subsistence were sufficiently alike throughout to produce a general type of social structure, discernible in the plans of the towns, and a religion which was practiced with great zeal, based largely upon the Indian's view of nature. Pottery making and weaving were arts that were generally cultivated.

So a building culture flourished in America in localities that invited permanence. An age during which the energies of the people were thrown into construction, not altogether out of need for housing, but partly as an expression of religious fervor. The epoch ran its course and was far into its decline when America was invaded from Europe. This decline would have been easy to account for, had it not set in until after 1492. The shock of the European conquest could not fail to change radically the evolution of the people. It would give them a new and dominating concern, which would modify their entire history. But the movement reached its apex some centuries before. It would seem that it simply ran its course and passed naturally into decline, as did the epoch of Cathedral building in Europe in the middle ages and as such exuberance of energy usually does.

The interesting suggestion has been made that the human animal manifests characteristics identical with those of other animals--insects, birds, etc., in which there is an instinctive impulse to action, an expenditure of vital force far beyond the necessities of life, this being so imperative and often carried to such extremes as to work great harm to the species. So this organic impulse of the sedentary peoples of the American Cordillera spent itself perhaps in building vast community

houses, sanctuaries and temple pyramids, along with the correlative activity of religious ceremonials, which were practiced with prodigious zeal.

In the isolation of the Southwest the range of interests was small, so that the forces of the people that were not employed in food production went into religious ceremonies, building and ceramic art; all rather closely integrated. The result was such a piling up of architectural monuments as rarely occurred even in the ancient world. As an illustration of this, Lt. Simpson estimated that in the construction of Chettro Kettle, a ruin in Chaco Canon, now being excavated by the School of American Research, not less than 30,000,000 pieces of stone were quarried, transported, shaped and laid in the walls. We now know that he might have made his estimate 50,000,000, so much more of the town being buried than he supposed, and in a great part of the walls there being an average of 800 pieces to the square yard, instead of the 450 counted by him. n addition to this, the thousands of logs, poles and slabs that had to be cut in distant forests, transported by man power, prepared with stone tools and built into the structures; the tons upon tons of mortar that had to be made--altogether it represents an enormous task for the small population of Chettro Kettle.

This was repeated proportionately in each of 12 large communities and in an unknown number of small villages in seven miles of Chaco Canon. It was no unwilling work under the lash of priestly or kingly task masters; the American Indians were never so ruled. It was the spontaneous, perhaps intuitive, industry of a strong people, comparable to the heaping up of mounds in excess of actual needs by insect communities. It may indicate the operation of an important organic law. Similar happenings were the building of the earth mounds of the Mississippi Valley, the Pyramids of Egypt and of Mexico, the great wall of China and the European cathedrals of the middle ages. A parallel to it is seen in the present day accumulation of wealth, which goes on far beyond the needs or possible uses of owners, a characteristic of our commercial age, which is being lived as unconsciously by the majority of people, so far as its real meaning is concerned, as was the building age of the aboriginal Americans in their time.

Such was the Southwest of yesterday. What of its future?

The titles of the papers to be read in the various sections of this meeting show the scope of present scientific research. It is a showing that we may look upon with profound satisfaction. Apparently there is hardly a subject that is vital to progress that is not receiving attention. So adequately are all the questions of our material development to be presented, that a reading of the program of this meeting is more convincing than anything I can say. May I venture to express this hope. These investigators are doing work of a highly constructive character. It will influence agriculture, stock raising, mining, finance, education, art — every branch of commerce and industry and culture. They are among the creators of the Southwest of the future. There must be some among them who are not too closely limited to special problems; some who see as a whole the vision of what the Southwest should be. There must be integration of these diverse efforts, inquiry into methods and purposes, and a strong influence for unity in ultimate ends. This I take it, is the particular function of our universities—perhaps to a certain extent of this Association. The name university implies this breadth of purpose and the word association should connote the bringing together of forces for common ends.

It remains for me to speak of the human relations that have grown out of the peopling of the Southwest. On this subject it might seem that no basic principles have been accepted, at any rate, not put into practice. It is true however, that a social structure is emerging from the in-

coherent elements and efforts of this time. Note the words and phrases that occur and recur in your daily experience, whether in business or professional life, that, with the exception of the first, you rarely heard a quarter of a century ago. Education — child welfare — social hygiene—race betterment—sanitation—social justice. They refer to movements touching human relations that are taking hours from your business and professional and domestic affairs every day—labor for which you have no material compensation, but instead, to which you give along with your time and work, a far greater part of your income than the traditional 10 per cent.

Assuredly there is some great impulse working toward the clarifying of the basic principles in human relations. When the period of incoherence has passed, these will probably stand out as clearly defined as are the laws in biological sciences that are understood and applied as a matter of course. Social justice is only the golden rule made operative. A system of education will come to mean simply the provision of that environment which will induce whatever development each individual is capable of. Child welfare will mean merely the protection of infancy from the beginning of embryonic life to the end of the period of dependence. I will extend this to include the guarding of the sources of life through some generations preceding parenthood; for the time will come when civilized people will prevent a very large part of the imbecility and prenatal infection and transmitted disease inflicted upon childhood by getting at the ignorant and vicious and defective who are to blame for it. Race betterment is the application of perfectly well known biological laws to breeding the human species. Social hygiene depends upon plain individual morality; personal decency in man and woman alike. Sanitation is mainly a matter of cleanliness, as vice and disease breed in filth. Why not have a year throughout the nation devoted to war upon uncleanliness in all its phases. I propose as a slogan for the campaign—"Cleanliness breeds Godliness."

In this brief survey of the Southwest as a field for scientific efforts, I have not thought of it as divided between two nations, but as one natural province. In science we are in the happy situation of not being limited by natural boundaries. The Southwest means Chihuahua and Sonora, as it means Texas, New Mexico and Arizona. Our natural conditions and resources are identical. Our scientific, educational, social and economic problems are the same. We have a common history not merely through a few centuries, but for ages past. These are strong bonds, and stronger still is the common ideal of government to which both these nations are irrevocably committed. Let it not be forgotten that through this decade of turmoil, the Mexican people have never wavered in their adhesion to republican government and free institutions.

The government of Mexico has graciously sent its official representative to participate in this meeting. We trust that he may see fit to bear to his government from us a message of good will that does not stop with mere words; the message that a cordial welcome awaits the youth of Mexico who care to come for the privileges of our universities, normal and technical schools and institutions of research; that we shall deeply appreciate the scientific opportunities that Mexico can open to us, and that to bring about a free interchange of thought and opportunity between these two countries, in mutual understanding and helpfulness is one of the objects to which the Southwestern Division of the American Association for the Advancement of Science is dedicated.

E. L. HEWETT.